

DESCRIPTION: **2W 6KVDC Isolated Dual Output DC/DC Converters**

The TPS series are miniature, 6KVDC isolated 2W DC/DC-converters in a DIP package with dual output. They offer the ideal solution in many space critical applications for board level power distribution. The internal SMD construction makes it possible to offer a product with high performance at low cost.The series offers smaller size, improved efficiency, lower output ripple noise.

FEATURES

RoHS compliant、CE certification	Dual outputs	Efficiency to 82%
Power density up to 0.44W/cm^3	No heatsink required	Low profile package
UL 94V-0 package material	6KVDC isolation	Footprint 4.75cm^2
Input voltage: 5V, 12V , 15V, 24V	Output voltage: ±5V, ±9V, ±12V, ±15V /5V, 9V,12V,15V	Operating temperature: -40ºC to 105ºC

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency
	V	V	mA	%
TPS0505	5	±5	±200/±20	73
TPS0509	5	±9	±110/±11	75
TPS0512	5	±12	±84/±8.4	77
TPS0515	5	±15	±68/±6.8	77
TPS0505A	5	5	400/40	75
TPS0509A	5	9	222/22.2	76
TPS0512A	5	12	167/16.7	78
TPS1205	12	±5	±200/±20	78
TPS1209	12	±9	±110/±11	80
TPS1212	12	±12	±84/±8.4	82
TPS1215	12	±15	±68/±6.8	82
TPS1205A	12	5	400/40	75
TPS1209A	12	9	222/22.2	78
TPS1215A	12	15	133/13.3	78
TPS1515	15	±15	±67/±6.7	77
TPS1515A	15	15	133/13.3	81
TPS2405	24	±5	±200/±20	77
TPS2409	24	±9	±111/±11.1	78
TPS2415	24	±15	±67/±6.7	80
TPS2405A	24	5	400/40	77
TPS2409A	24	9	222/22.2	78
TPS2412A	24	12	167/16.7	81
TPS2415A	24	15	133/13.3	80

Add suffix “P” for continuous short circuit protection, for example TPS0505P.

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	5V input	4.5	5	5.5	V
Voltage range	12V input	11	12	13.2	V
Voltage range	15V input	13.4	15	16.4	V
Voltage range	24V input	22	24	26.5	V

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	TA= -40°C to 85°C			2	W
Voltage Set Point Accuracy	See tolerance envelope			10	%
Line regulation	High VIN to low VIN		1.0	1.2	%/%
Load Regulation(10% load to rated load)	5V output		9	16	%
Load Regulation(10% load to rated load)	9V output		7	16	%
Load Regulation(10% load to rated load)	12V output		7	16	%
Load Regulation(10% load to rated load)	15V output		7	16	%

TOPPOWER

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Internal power dissipation	890mW
Input voltage Vin, TPS05	7V
Input voltage Vin, TPS12	15V
Input voltage Vin, TPS15	18V
Input voltage Vin, TPS24	28V

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Tested for 1 second	6000			VDC
Resistance	Viso= 1000VDC	1			GΩ

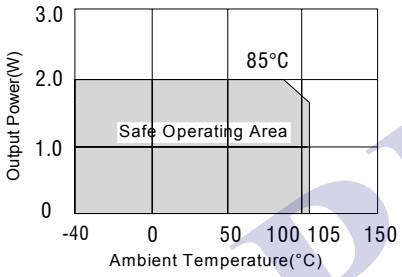
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	All input types		40		kHz

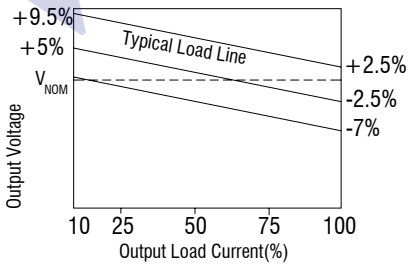
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	Derating if the temperature ≥85°C	-40		105	℃
Storage		-50		130	℃
Case Temperature above ambient	All output types			35	℃
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

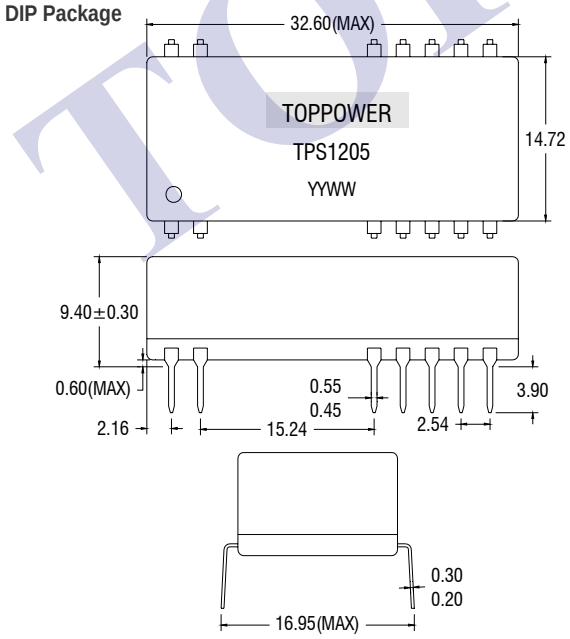


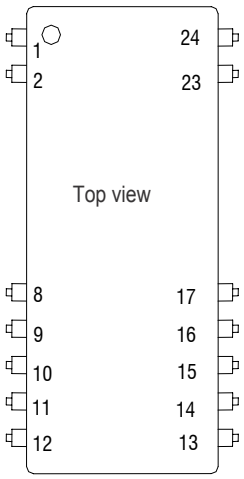
TOLERANCE ENVELOPES



MECHANICAL DIMENSIONS

DIP Package





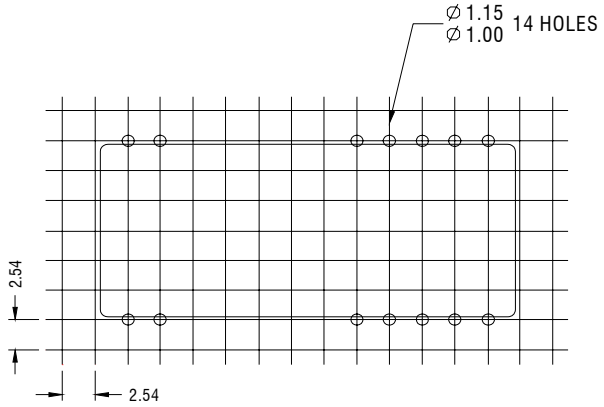
All dimensions in mm ±0.25mm. All pins on a 2.54mm pitch and within ±0.25mm of true position.

PIN CONNECTIONS

24 PIN DIP		
Pin	Dual output	Single output
1	+Vin	+Vin
2	-Vin	-Vin
8	-Vout	NC
9	NC	NC
10	OV	OV
11	NC	NC
12	+Vout	+Vout
13	+Vout	+Vout
14	NC	NC
15	OV	OV
16	NC	NC
17	-Vout	NC
23	NC	NC
24	NC	NC

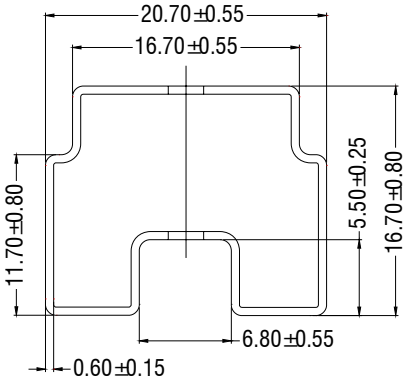
TOPPOWER

RECOMMENDED FOOTPRINT DETAILS



Unless otherwise stated all dimensions in mm±0.5mm.

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm±0.5mm.

Tube length : 520mm±2mm. Tube Quantity : 15PCS

SOLDERING INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300ºC for 10 seconds. The series is backward compatible with Sn/Pb soldering systems.

TOPPOWER